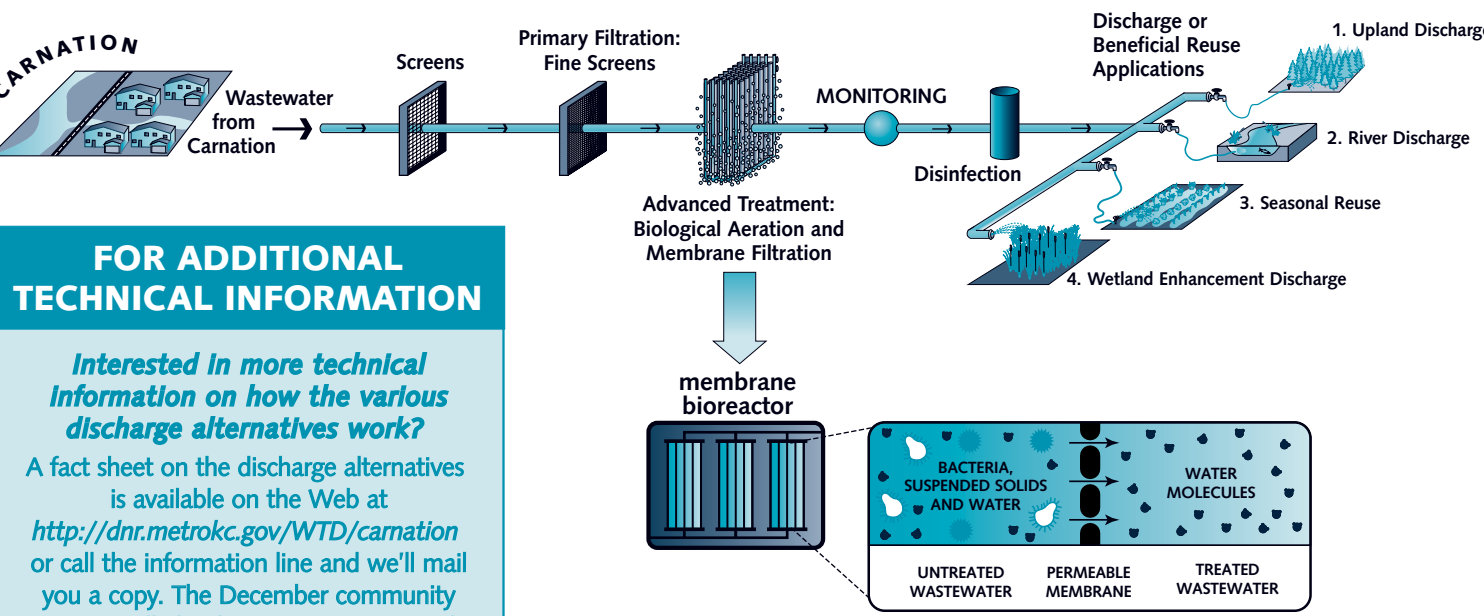


# HOW THE SYSTEM WORKS:

## CARNATION TREATMENT PLANT: POTENTIAL TREATMENT PROCESS

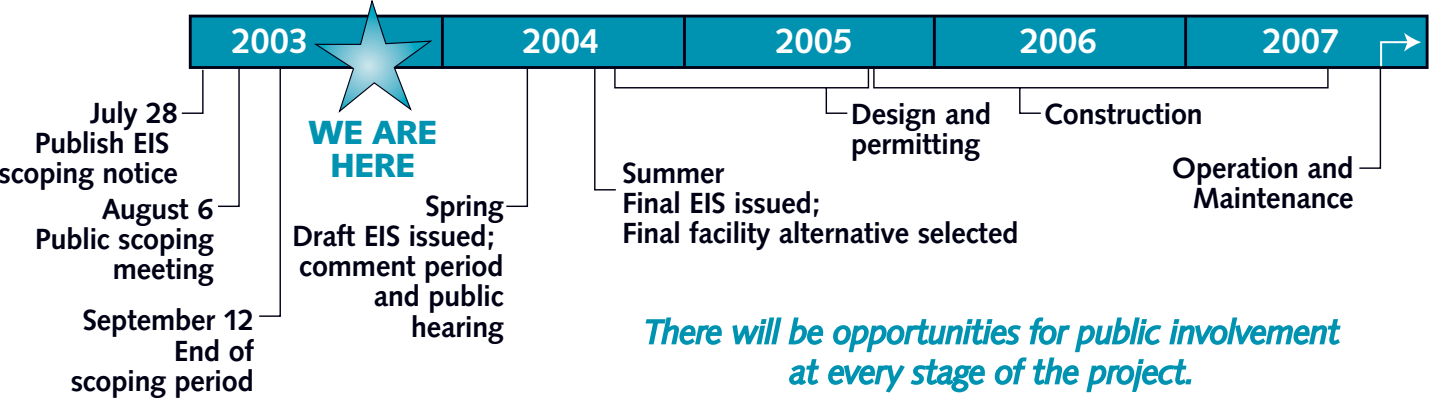


### FOR ADDITIONAL TECHNICAL INFORMATION

*Interested in more technical information on how the various discharge alternatives work?*  
A fact sheet on the discharge alternatives is available on the Web at <http://dnr.metrokc.gov/WTD/carnation> or call the information line and we'll mail you a copy. The December community meeting will also feature experts on each of the discharge alternatives.

*The Carnation Treatment Plant will treat up to 350,000 gallons of wastewater every day.*

## PROJECTED CARNATION WASTEWATER TREATMENT FACILITY TIMELINE



### FOR MORE INFORMATION OR TO LET US KNOW YOUR OPINION

To comment on the project or for more information on the treatment plant, contact King County's Carnation Wastewater Treatment Plant Project Information Line at 206-263-5212 or toll-free at 1-800-325-6165, ext. 35212. Or send an e-mail message to [CarnationWWTP@metrokc.gov](mailto:CarnationWWTP@metrokc.gov), or check the project Web site at <http://dnr.metrokc.gov/WTD/carnation/>. For information on the local sewage-collection system, contact Carnation City Manager Bill Brandon at 425-333-4192, or visit the city's Web site at <http://www.ci.carnation.wa.us/>.

*Clean water – a sound investment.*

**King County**  
Department of Natural Resources and Parks  
Wastewater Treatment Division  
201 S. Jackson St., KSC-NR-0505  
Seattle, WA 98104-3855

## CARNATION WASTEWATER TREATMENT FACILITIES

# COMMUNITY MEETING

**DEC. 4, 2003, 6:30-9:00 P.M.**

The information in this newsletter is available on request in accessible formats by calling 206-296-8361 or 711 (TTY).

### SIGN UP FOR THE PROJECT MAILING LIST

Take a look at your mailing label. If it has a "ML" after your name, we have you on our mailing list and you don't need to do anything if you want to stay on it. So we don't miss anyone, we have been mailing to all property owners and to a ZIP code list to make sure everyone knows about the project and could take part in the EIS scoping. (That is why some of you got more than one copy.)

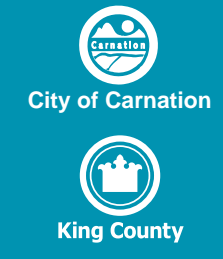
We will do one more mass mailing for the Draft EIS, but then we want to scale back to people who want to be on the list. **If you don't have an "ML" by your name, and you want to be on the mailing list, send us the attached coupon, call the information line, or e-mail us with your name and address.**

### PLEASE KEEP ME INFORMED!

If you don't have an "ML" by your name on your mailing label, call **206-263-5212** or toll-free at **1-800-325-6165, ext. 35212**, e-mail us at [CarnationWWTP@metrokc.gov](mailto:CarnationWWTP@metrokc.gov), or send this coupon to: King County Dept. of Natural Resources and Parks, Wastewater Treatment Division, 201 S. Jackson St., KSC-NR-0505, Seattle, WA 98104-3855

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# CARNATION WASTEWATER TREATMENT FACILITIES PROJECT UPDATE

Fall/Winter 2003

## DOES CARNATION NEED A WASTEWATER TREATMENT PLANT?

There are both environmental and economic reasons to build a wastewater treatment system for the City. Current and previous City Councils have long recognized this need. Failing septic systems pose a serious threat to both the overall economic viability and environmental quality of Carnation. A new wastewater treatment plant will allow the city to grow back into its footprint, provide businesses and services to meet the residents' needs and still maintain a high quality of life in a small town atmosphere. Our City Council on Oct. 7 adopted two alternative locations for treating wastewater and three alternatives for discharging wastewater to be evaluated in an

environmental impact statement, or EIS. In 2002, the City of Carnation entered into an interlocal agreement with King County to design, build, operate and maintain the treatment facilities to protect public health and the environment. King County is the leader in treating wastewater in this region.

We look forward to any questions you may have on the wastewater treatment system. Please feel free to stop by City Hall or give me a call at 425-333-4192.

Bill Brandon, Carnation City Manager

# COMMUNITY MEETING

## SCHEDULED FOR DEC. 4, 2003

We hope you will join us at the next community meeting to learn more about the Carnation Wastewater Treatment Facilities. At this meeting, you can:

- Learn how public comments resulted in a change to the proposed river discharge alternative and a new wetland enhancement discharge alternative.
- Get more detailed information on all the discharge alternatives and how they will be evaluated.
- Find out how clean the water will be, at a presentation on advanced treatment and how the technology proposed for this plant works.
- Let us know what is on your mind, and ask project staff your questions.

**When:**  
Thursday, Dec. 4, 6:30 - 9:00 p.m.  
**Where:**  
Tolt Middle School Multipurpose Room,  
4950 Tolt Ave., Carnation, WA



*Come learn more about the wetland enhancement discharge alternative being studied.*



*Bill Brandon, manager of the City of Carnation, and John Komorita, project manager from King County, address attendees at an earlier public meeting.*



**Thank you for your scoping comments!**  
Thank you to the people who commented during the Carnation wastewater treatment facility environmental scoping process, which ended Sept. 12, 2003. Scoping is the first formal step in the review process under the State Environmental Policy Act for developing an environmental impact statement, or EIS. We appreciate your thoughts and suggestions. We received 76 comment submittals (letters, e-mails, mail-back comment forms from the scoping notices, and/or testimony to a court reporter) from property owners, residents, public agencies and other interested groups. A complete set of all the comments is available at both Carnation City Hall and the Carnation Public Library. In addition, a summary of the comments is on our Web site at <http://dnr.metrokc.gov/WTD/carnation>.

Comments received during the scoping period helped refine the alternatives that will be evaluated in the draft environmental impact statement. The comments will also help focus the analysis in the draft EIS.

Technical and environmental studies underway

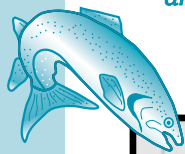
King County's Wastewater Treatment Division has begun additional technical and environmental investigations for the wastewater treatment facilities. Engineering and cost evaluations of the treatment, conveyance and discharge alternatives are under way to provide more details to the initial facility concept. Hydrogeologic and surface water quality studies, endangered species assessments, sensitive areas investigations, and other evaluations are being conducted to establish existing conditions as a baseline for the environmental impact evaluation.

Opportunities for public input

In addition to the public meeting on Dec. 4, King County and the City of Carnation will continue to gather information from agencies, property owners and other interested parties, and to provide project updates and opportunities for input. There will be opportunities to comment on the draft EIS, which will be issued in spring 2004. Comments on the draft EIS will be addressed in the final EIS, scheduled for release next summer. The City of Carnation and King County Executive will then select the final treatment plant site and discharge alternative.

PUBLIC COMMENT LEADS TO REFINED ALTERNATIVES FOR CARNATION WASTEWATER TREATMENT FACILITIES

*Responding to public comments, King County and the City of Carnation have added a new alternative and modified the river outfall alternative for discharging advanced treated wastewater from the proposed Carnation treatment plant. Reflecting these changes, the Carnation City Council on Oct. 7 adopted two alternative locations for treating wastewater and three alternatives for discharging wastewater to be evaluated in an environmental impact statement, or EIS.*  
*"Fully evaluating two treatment plant sites and a variety of discharge alternatives will enable us to select the best combination of alternatives for Carnation," said Carnation City Manager Bill Brandon.*



Discharge alternatives have changed

One of the new discharge alternatives replaces the proposed Snoqualmie River outfall site at Chinook Bend northeast of Carnation with a river site at Carnation Farm Road Bridge. The **river outfall site** would include a partly buried 8-inch-diameter pipe extending a short distance into the river.

*"Moving the river alternative to the bridge benefits long-range salmon recovery by supporting plans for a new side-channel salmon-rearing habitat at Chinook Bend. The enhanced-wetlands discharge alternative would restore wetlands and provide fish and wildlife habitat."*



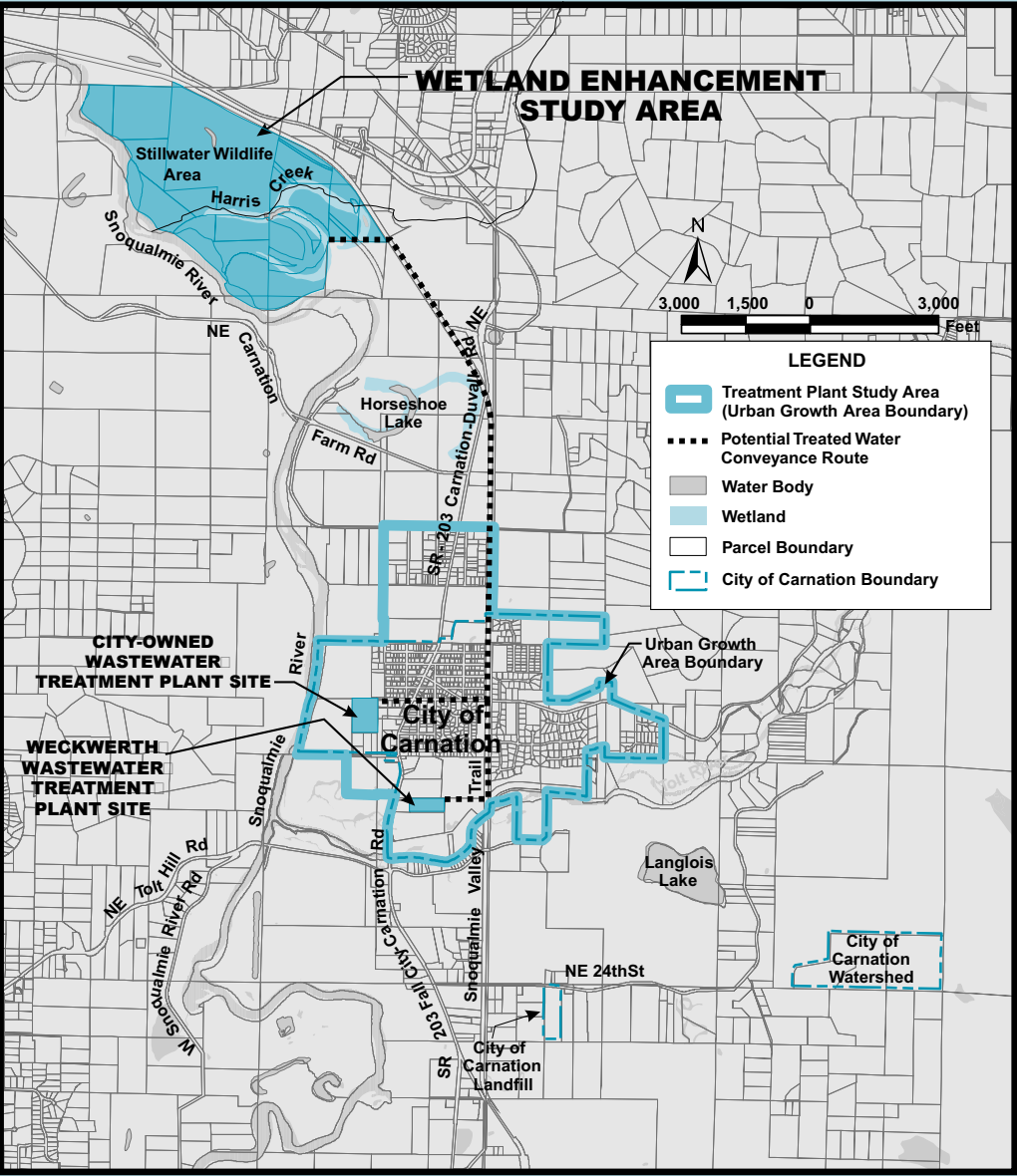
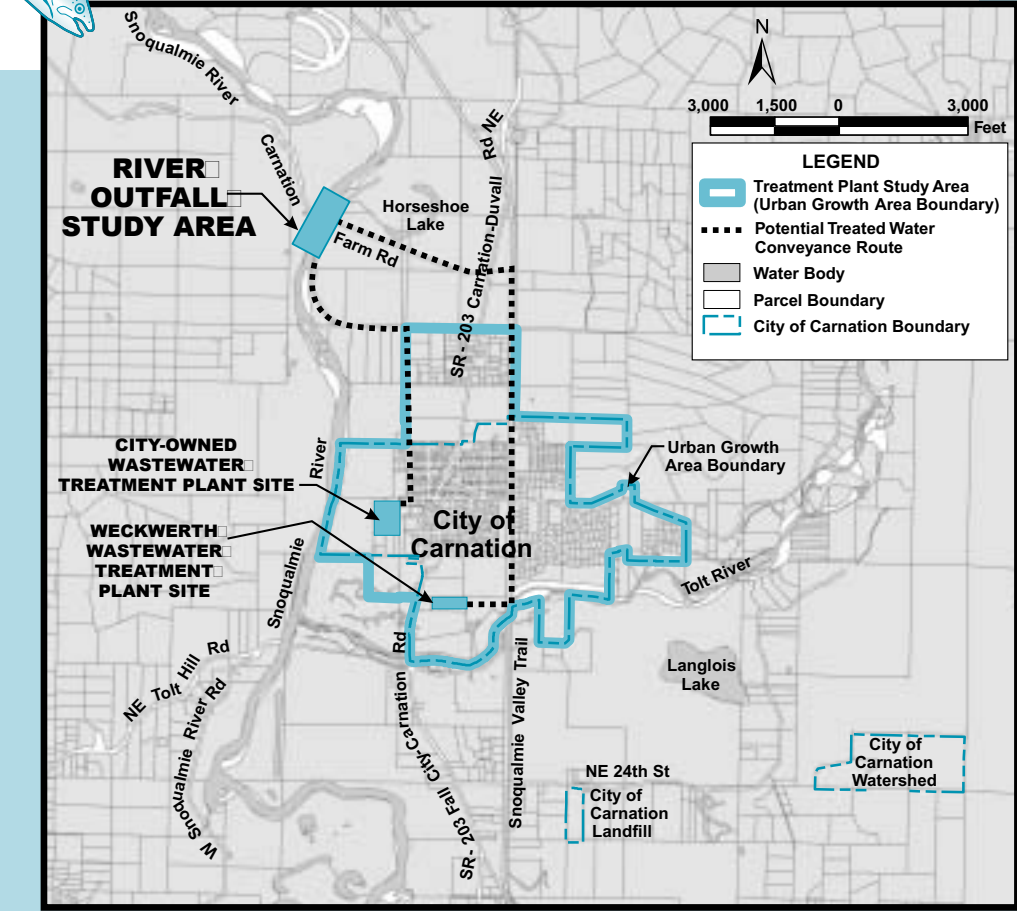
Christie True, Manager,  
King County Wastewater Capital Improvement Program

Treatment plant study sites remain the same

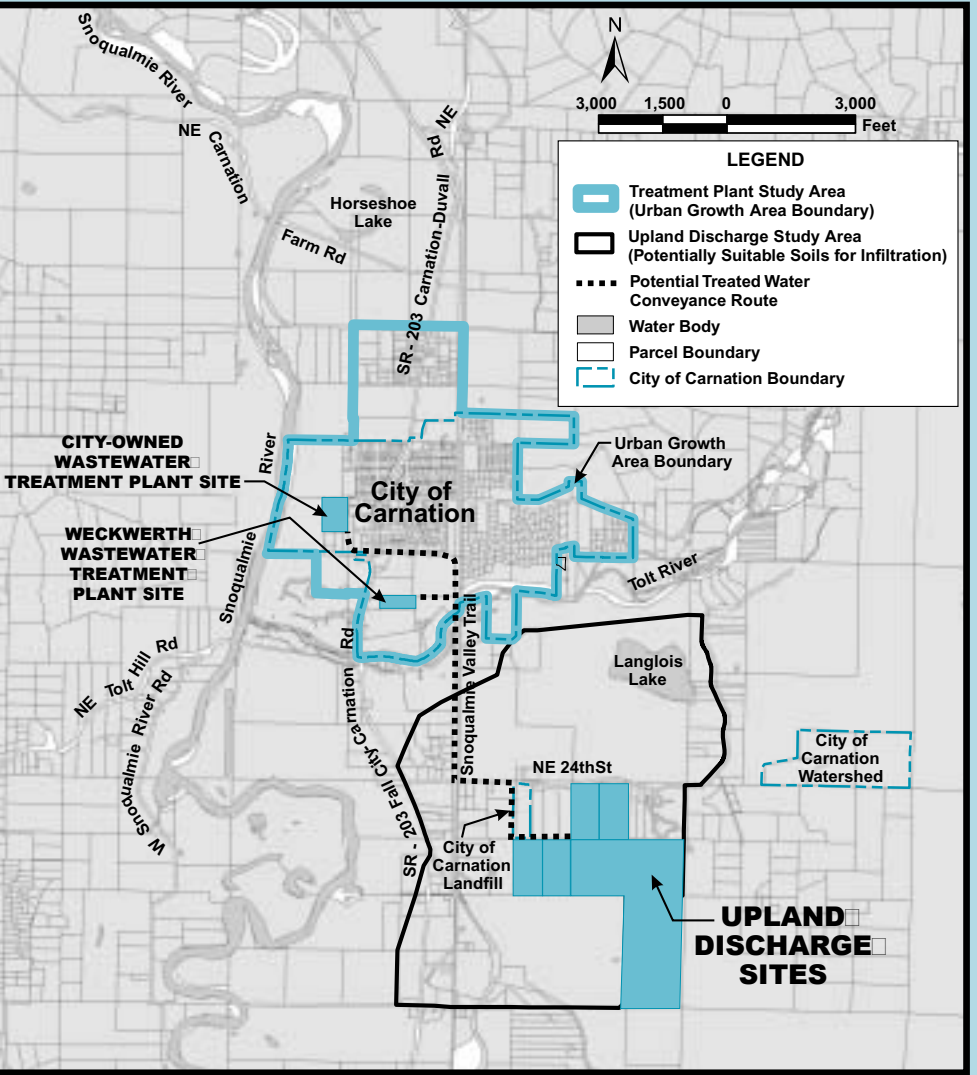
Unchanged from the original proposal are the two alternative treatment plant locations in Carnation:

- **City-owned (Schefer) site:** a treatment plant site west of the business district and state Highway 203 on city-owned property at the end of Entwistle Street.
- **Weckwerth site:** a treatment plant site in the area now used for concrete forming east of the Carnation Fire Station and Highway 203.

*Any of the three discharge alternatives could be combined with either of the alternative plant sites. Water from the plant will be treated to such a high level that it is safe to be used as reclaimed water for irrigation or wetland restoration. The county will continue to evaluate potential reclaimed water uses in the Carnation area, such as irrigating park or agricultural land.*



Unchanged from the original proposal this summer is a third discharge alternative called the **upland discharge site**. That alternative involves infiltrating tertiary-treated water from the plant through soil into groundwater at a site or sites southeast of Carnation.



HOW CLEAN WILL THE WATER BE?

Wastewater treatment 101

Wastewater is usually treated in two stages. Primary treatment removes about 60 percent of the solids in the waste stream by skimming and settling the water. Secondary treatment removes most remaining solids, up to 95 percent, using a biological process. In secondary treatment, the wastewater enters an aeration basin, where oxygen is added to wastewater to activate the naturally-occurring bacteria that eat dissolved organic material. This standard process is used at King County's existing plants in Seattle and Renton. This secondary effluent meets the tough environmental requirements and regulatory standards required to discharge into the Puget Sound.

What does advanced treatment mean?

Advanced treatment (also called tertiary treatment) is additional treatment of wastewater beyond the secondary or biological treatment stage. It includes the removal of nutrients such as phosphorous and nitrogen and a high percentage of suspended solids. The Carnation Wastewater Treatment Plant will treat wastewater with this advanced treatment **regardless of the discharge alternative chosen**.

A new advanced treatment process called membrane bioreactor, or MBR, would go one step further

For the Carnation Wastewater Treatment Plant, King County proposes an advanced treatment process called a membrane bioreactor. Membrane bioreactors combine standard biological wastewater treatment with synthetic membrane filters submerged in wastewater. Membrane cartridges or plates are in a tank where the biological process is taking place. The filters have pores large enough to let water molecules pass through but

small enough to screen out undesired particulates, including individual bacteria. Suction pulls clean water through the membranes. Solids stay in the process tank, while cleaned water goes on to be disinfected. Unlike typical secondary treated wastewater, no additional treatment except disinfection is required to produce Class A reclaimed water suitable for irrigation or any of the other discharge alternatives being considered.

Membranes have been used to treat drinking water for over a decade. For the size of Carnation, membranes would cost roughly the same amount as conventional technology such as sand filtration. Since membranes require more energy, operation and maintenance costs would be higher.

*(See diagram on reverse panel.)*